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09/147.320 02/02/99 LEIJON

M 9847-0004-6X

EXAMINER

MMC1/0424

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ART UNIT

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/147,320

Applicant(s)  
Leijon et al.

Examiner  
Chau Nguyen

Art Unit  
2831



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 19-38 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 22 20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 38 is rejected under 35 U.S.C. 102(b) as being anticipated by Carini et al. (3,876,462).

Carini et al. discloses a high-voltage insulated conductor comprising means (1) for conducting an electrical current, means (2-4) for electrically insulating the means for conducting, the means for electrically insulating having means (2) for creating a first equipotential surface, means (4) for creating a second equipotential surface, means (3) for separating the first equipotential surface from the second equipotential surface, and means for setting a resistivity (carbon black).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 19, 22-25, 30-33, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. (3,876,462) in view of Hvizd, Jr. et al.

Carini et al. discloses a high-voltage cable comprising one or more strands (1), an inner conductive layer (2) that surrounds the one or more strands, an insulating layer (3) that surrounds and contacts the inner conductive layer, and an outermost conductive layer (4) that surrounds the insulating layer, wherein the outermost conductive layer comprises a polymer and carbon black (claims 19, 36-37).

Carini et al. does not disclose the outermost layer having a resistivity of 10 to 500 ohm\*cm (claims 19, 36, 37) or of 50 to 100 ohm\*cm (claim 22).

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Hvizd, Jr. et al. discloses an invention related to an insulated high-voltage cables. Hvizd, Jr. et al. discloses that it is well-known in the high voltage cable art that semiconductive material having resistivities in the range of 1 to 1,000,000 ohm\*cm (col. 2, line 65-67). It would have been obvious that depending on the specific use of the resulting wire, one skilled in the art would choose a suitable resistivity for the outermost layer of Carini et al. to meet the specific requirement since a resistivity having ranges of 10 through 500 ohm\*cm or 50 through 100 ohm\*cm are well-known in the cable art for semiconductive material as taught by Hvizd, Jr. et al.

The resistances as recited in claims 23-25 are inherent from the modified outermost layer of Carini et al. since the modified Carini et al. outermost layer has the resistivity as claimed in claim 19.

Re claims 30 and 33, Carini et al. discloses the insulating layer being configured to adhere to the outermost conductive layer with a predetermined adhesion strength and being a XLPE. Re claims 31 and 32, the method limitation, extruded or extrusion through a multilayer head, does not contribute to the patentability of the product claims since it has been held that the patentability of a product does not depend on its method of production. In re Thorpe, 777 F2d, 695, 698, 227 USPQ 964, 966.

Re claims 36 and 37, Carini et al. does not specifically disclose the insulated wire being used in an electric machine or a rotating electrical machine. However, it would have been obvious to one skilled in the art to use the modified insulated wire of Carini et al. in an electric machine or a rotating electric machine since the insulated wire of Carini et al. is suitable for being used in

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high-voltage applications and using an insulated wire in a rotating electrical machine is well-known in the art.

5. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Elton et al. (5,066,881).

Claim 20 additionally recites the outermost conductive layer being grounded at at least two different points. Elton et al. discloses an insulated wire (fig. 7) wherein the outer conductive layer (110) is grounded (at 112). It would have been obvious to one skilled in the art to ground the outermost conductive layer of the Carini et al. wire as taught by Elton et al. to establish and maintain the potential of the conductive layer. It would have been obvious to one skilled in the art to provide another grounding point on the outermost conductive layer of the Carini et al. wire to improve the grounding effect of the outer layer because it has been held that duplicating an essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Re claim 21, the outermost (semi) conductive layer of Carini et al. has a resistivity being lower than that of the insulating layer (3) and higher than that of the material (conductive material) comprising the one or more strands.

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6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Silver et al.

Claim 26 additionally recites the resistivity of the outermost conductive layer being set by a type of the base polymer, a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the outer conductive layer. Silver et al. discloses an insulated wire comprising a conductive layer (3 or 4) being made of a base polymer and a carbon black. Silver et al. discloses the resistivity of the layer being set by a type of the base polymer (col. 4, lines 35-39), a type of the carbon black and a proportion of the carbon black relative to an entire formulation of the layer (col. 1, lines 20-37). It would have been obvious to one skilled in the art to choose suitable types of polymer and carbon black and use an appropriate amount of the carbon black as taught by Silver et al. to meet the specific required resistivity of the Carini et al. outermost layer.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. and Silver et al. as applied to claim 26 above, and further in view of Robert et al. (5,530,206).

Claim 27 additionally recites the base polymer comprising an ethylene butyl acrylate copolymer. Robert et al. discloses a cable comprising a semiconductive layer having a base polymer being comprised of an ethylene butyl acrylate (col. 3, lines 42-47). It would have been obvious to one skilled in the art to use ethylene butyl acrylate as the base polymer for the

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outermost layer of the modified Carini et al. wire since ethylene butyl acrylate is a well-known (conventional) polymer being used in semiconductive materials as taught by Robert et al.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. as applied to claim 25 above, and further in view of Yamanouchi et al.

Claim 28 additionally recites the outermost conductive layer being cross-linked by peroxide. Yamanouchi et al. discloses an invention related to a cross-linked insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to use peroxide as a cross-linking agent for the cross-linked outermost layer of the modified Carini et al. cable since peroxide has a relatively high cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23).

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. and Silver et al. as applied to claim 26 above, and further in view of Yamanouchi et al.

Claim 29 additionally recites the outermost conductive layer being cross-linked by peroxide. Yamanouchi et al. discloses an invention related to a cross-linked insulated cable comprising a cross-linking agent which is a peroxide (col. 1, line 19). It would have been obvious to one skilled in the art to use peroxide to cross-link the outermost conductive layer of the



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modified Carini et al. wire since peroxide has a relatively high cross-linking efficiency and suitable decomposition temperature as taught by Yamanouchi et al. (col. 1, lines 20-23).

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Breitenbach et al.

Claim 34 additionally recites the insulating layer being made of EPR. Breitenbach et al. discloses a cable comprising an insulating layer (8) being made of EPR. It would have been obvious to one skilled in the art to use EPR for the insulating layer of the modified Carini et al. cable since EPR is an insulating material suitable for being used in high voltage applications as taught by Breitenbach et al.

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carini et al. in view of Hvizd, Jr. et al. as applied to claim 19 above, and further in view of Simmons et al.

Claim 35 additionally recites the insulating layer being made of LDPE, HDPE or PP. Simmons et al. discloses an extra high-voltage cable comprising an insulating layer (5) being made of HDPE or PP (col. 2, line 36). It would have been obvious to one skilled in the art to use HDPE or PP for the insulating layer of Carini et al. since HDPE or PP has a relatively high electric strength such that the thickness of the insulating layer can be significantly reduced as taught by Simmons et al. (col. 2, lines 40-44).

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*Response to Arguments*

12. Applicant's arguments with respect to claims 19, 36-38 have been considered but are moot in view of the new ground(s) of rejection.

*Communication*

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N. Nguyen whose telephone number is (703) 308-0693.



Chau N. Nguyen

Patent Examiner

April 16, 2001